

## Chapter 4

# The Field Artillery Battalion Planning Process

This chapter provides an overview of the FA battalion planning process. Technological advancements in weapon lethality, TA, information management, and sensor-to-shooter links have required corresponding improvements in the speed and efficiency of the MDMP. This applies particularly to FA operations where reaction times are brief and crucial to overall mission success. FA battalion planning involves both the MDMP, which includes IPB, and the products of the planning process. These products include the FSP, the FASP, and the various orders used to disseminate instructions and information. This chapter is organized into three major sections: Section I covers the MDMP; Section II is an overview of FA IPB; and Section III addresses FA battalion rehearsals.

### SECTION I – THE MILITARY DECISION-MAKING PROCESS

4-01. This section provides a general overview of the MDMP process in a situation with adequate planning time. The MDMP actions discussed throughout this section do not represent a “lock-step” process, but often overlap, occur simultaneously, or in a slightly different sequence. During time-constrained planning, planners may abbreviate and combine steps, but generally should not omit a step entirely. Also, the battalion commander will participate more directly in the process, receiving in-progress updates and providing immediate guidance and decisions (vice formal briefings).

4-02. The FA battalion commander and staff should use the MDMP methodology as a guide for the battalion’s planning process. They must tailor the MDMP to fit the tactical situation and the battalion’s FA tactical mission. In a battalion with a DS mission, they must integrate the battalion’s planning process with the supported maneuver unit’s planning process. This includes development of a FSP and its accompanying FASP as part of the maneuver unit’s OPORD. Figure 4-1 is an example of parallel planning for a DS battalion. (See FM 101-5 for more information on the MDMP and FM 6-20-40 on integration of the DS FA battalion’s MDMP with the maneuver MDMP.)

4-03. R, GSR, or GS FA battalions must also integrate and synchronize their planning processes with higher and/or supported maneuver and FA HQ planning. The extent of this integration varies with the situation. But often their MDMP may focus more on their battalion’s execution of assigned tasks, and they usually do not prepare their FASP as an integral document to a maneuver OPORD/FSP.

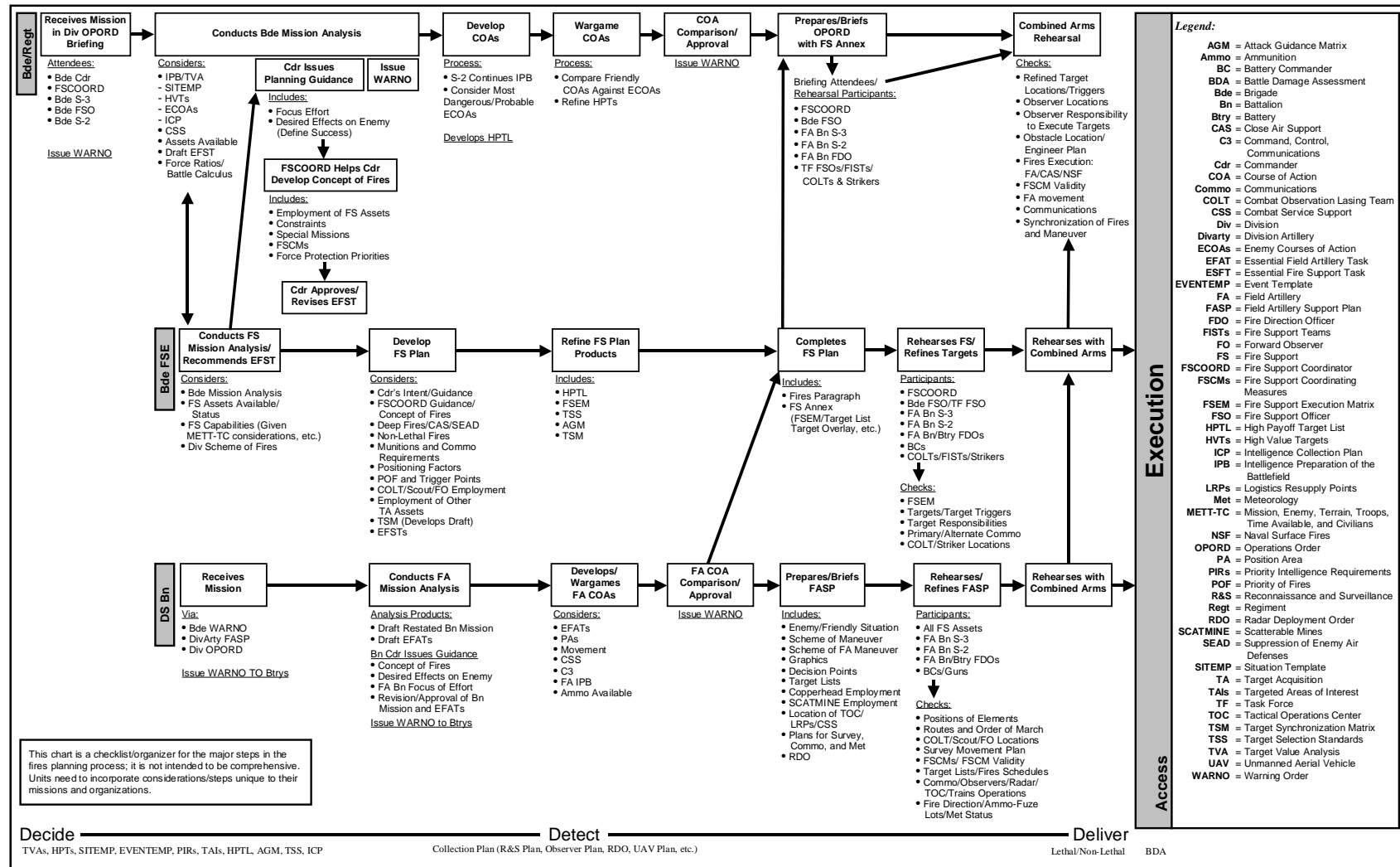


Figure 4-1. The Fires Planning Process

## RECEIVE THE MISSION / MISSION ANALYSIS

4-04. MDMP and product development begin upon mission receipt or the identification of a pending mission or situation change. A FA battalion usually receives a mission alert via a series of verbal or written warning orders (WARNO) issued by a maneuver HQ, the FSCOORD, brigade FSO, force FA HQ, FA brigade HQ, or reinforced FA unit. As soon as the WARNO is received, the battalion S3 alerts the battle staff of the pending planning process. The XO, as chief of staff, has primary responsibility for supervision of the FA battalion's MDMP process, while the S3 has responsibility for preparation of the FASP, and the brigade FSO has responsibility for preparation of the FSP.

4-05. The commander and staff immediately initiate mission analysis with a quick review of the WARNO and begin preparing staff estimates by gathering information such as: status of all assigned, attached, and supporting units (to include FS sections, met, radar, and communication assets), CSS by class of supplies, and major equipment. This initial assessment should include rough estimates of survey and PA requirements, ammunition, fuel, and other critical items, especially requirements for external support (such as radar). Staff officers must "cross-talk" with respective counterparts in supported maneuver/FA units and higher FA HQ. The XO and key CSS planners (the S4 and/or S1) may move to the TOC to directly participate in the planning.

4-06. The commander, XO, and S3 conduct an initial assessment to optimize the available planning and rehearsal time while preserving time for batteries and supporting units to plan, rehearse, and prepare. Reverse planning is one method of timeline development. The battalion must synchronize its MDMP timeline with the maneuver and/or higher FA HQ timelines as closely as is possible at this stage.

4-07. The FA battalion commander may go to the maneuver or higher FA HQ to participate in their MDMP or receive a mission brief. Before departing, the commander should receive initial staff estimates and updates. He must thoroughly understand the battalion's current status, especially constraints and limitations, in order to accurately represent the battalion during maneuver/higher FA HQ planning. He should also issue his initial planning guidance to the staff. This guidance should focus the staff on mission specifics during mission analysis (e.g., CCIR, type of order to produce, critical tasks, rehearsal guidance, R&S, ammunition requirements, early movement/positioning). (If the commander does not go to the supported/higher HQ, all this information must be passed into the supported/higher HQ MDMP by other means.) The battalion S3 then issues a WARNO to the batteries and supporting units to allow parallel planning to begin. This WARNO should include estimated times for issuance of the FASP and battalion and battery rehearsal schedules.

4-08. Upon returning, the commander or the S3 will conduct a quick mission brief to the staff while the operations NCO passes out copies of applicable documents. The commander issues new guidance as necessary and the staff provides the commander brief updates on their staff estimates. Timelines are revised, with emphasis on the FASP/FSP production and rehearsals. In DS

units, FSP issues and brigade FSE-battalion TOC coordination may be discussed. Mission analysis and staff estimates continue in preparation for the key product – the mission analysis briefing. The following paragraphs discuss the various actions that occur during mission analysis.

#### **ANALYZE THE HIGHER HQ ORDER**

4-09. The FA battalion commander and his staff continue their analysis of higher HQ orders, ensuring they understand the maneuver or higher FA HQs mission and tasks, and the overall plan that they support. They identify the battalion's mission and tasks. The staff must also understand the missions assigned to other FA units, because this may impact how they are utilized during the battle. The FA commander usually obtains this understanding through direct discussion with the maneuver unit or higher FA HQ commander, and through active participation in the maneuver/higher FA planning process. The review of the order focuses on the commander's intent, concept of operations, areas of operation and interest, tasks, and potential issues involving constraints, restraints, limitations, and anticipated enemy actions that may necessitate special attention.

#### **PLAN USE OF AVAILABLE TIME**

4-10. Maximizing the time available is critical to the planning process. Some actions, such as FIST/COLT deployments or critical fire missions, may occur hours before the main H-hour for the operation. The commander and staff must continuously balance detailed planning against time available. The battalion S3 can maximize available planning time for the batteries and supporting units by sending additional WARNOs as planning develops to allow parallel planning, nested rehearsals and training, and completion of precombat checks (PCCs). In particular, WARNOs specify key details (time, place, types) for orders production, briefings, rehearsals, preparations, and actual operations. As more details become available, the S3 should refine the timeline, usually applying the one-third/two-third planning rule.

#### **DETERMINE SPECIFIED, IMPLIED, AND ESSENTIAL TASKS**

4-11. The FA battalion staff must identify all tasks the unit must accomplish to support the supported unit's mission. The staff extracts from all applicable orders and plans those tasks clearly identified (specified) as battalion responsibilities. The staff also reviews all orders and plans to identify those tasks that are not specified but are important to mission accomplishment (implied tasks). The staff then reviews SOPs and other applicable documents, and conducts a macro analysis of the battalion's role in the operation to identify any implied tasks that may be required. See FM 101-5 for additional information on tasks.

### Specified Tasks

4-12. Specified tasks are those tasks clearly stated as requirements that the battalion must accomplish. Higher HQ orders, plans, or messages usually clearly state the specified tasks in the main order, annexes, and/or overlays. These may or may not be essential tasks critical to overall mission accomplishment. Some examples of specified tasks:

- Firing SCATMINE beyond the objective to slow retreat of enemy forces.
- Positioning COLTs to observe specified TAIs.
- CCIR that the supported maneuver or higher FA HQ tasked the battalion to answer.

### Implied Tasks

4-13. Implied tasks are tasks that must be performed to accomplish a specified task, but which are not stated in the higher headquarters' order. Implied tasks are derived from a detailed analysis of the order, the enemy situation and courses of action, and the terrain. They do not include normal SOP-type activities. Examples of implied tasks are:

- Conducting an airmobile operation or artillery raid to position FA to range a particular target or target set.
- Providing a liaison team or FS team to support a nonstandard mission, organization, or situation.

### Essential Tasks

4-14. Once the staff identifies all specified and implied tasks, they determine, in concert with the FSEs in DS units, which tasks are essential (EFSTs/EFATs) and identify relative task priorities based on maneuver/FA commander guidances. EFSTs are those FS tasks essential to the success of the maneuver operation. (e.g., Phase II fires disrupt and delay enemy second echelon maneuver brigades from H+1 to H+3 in order to deny access to our AO, vicinity Smithsville, until the brigade completes defensive preparations.) EFSTs are primarily applicable to DS units and are normally developed by the FSEs as part of the maneuver MDMP.

4-15. The FA battalion staff generally concentrates on EFATs - those FA specific tasks essential to support certain EFSTs and the maneuver operation. A primary source of EFATs is the "method" of an EFST that specifies the target is to be attacked by artillery. A fully developed EFAT addresses task, purpose, method, and effects. **Tasks** specify whether the target must be suppressed, neutralized, destroyed, screened, or obscured. The **Purpose** describes how the successful engagement of the target contributes to the maneuver commander's plan (taken from the EFST's purpose). The **Method** discusses how the FA battalion will achieve the task. The staff determines the method for each EFAT during COA development. **Effects** describe what the battalion must accomplish to successfully achieve the task.

4-16. An example of an EFAT supporting the previously described EFST might be "Provide interdiction fires (DPICM and SCATMINE) at chokepoints in engagement area (EA) Blue, between H+1 and H+2 to disrupt the enemy first brigade, cause 10% loss of vehicles, and delay it for 30-60 minutes". EFATs may also include:

- Firing smoke in support of a breaching operation.
- Destroying reconnaissance elements in a designated battle sector.
- Providing SEAD for an attack helicopter mission.
- Destroying dismounted infantry when they are most vulnerable (during dismount) or at a critical event (breach of a friendly obstacle).
- Conducting counterfire at a critical point in the battle to suppress enemy artillery.

Completed in detail, an EFAT may look like the following examples:

- EFAT 1 - Delay reinforcement by the 2<sup>nd</sup> echelon tank battalion (146th mechanized infantry brigade (MIBR)) for two to four hours.
  - Task: Emplace 400 X 400 and/or 200 X 800 medium density, short duration, remote antiarmor minefield.
  - Purpose: Delay or shape 2<sup>nd</sup> echelon tank battalion arrival into EAs Green or Hornet so that enemy echelons can be defeated sequentially.
  - Method: One battery per minefield; one survivability move after emplacement.
  - Effects: Enemy 2<sup>nd</sup> echelon tank battalion delayed and unable to assist lead mechanized and tank battalions before we complete their defeat in the EAs.
- EFAT 2 – Prevent or disrupt enemy attempts to breach friendly obstacles in EAs Green and Hornet during 146 MIBR attack.
  - Task: Attack enemy targets approaching or attempting to breach the friendly obstacles in EAs Green and Hornet.
  - Purpose: Prevent or disrupt enemy breaching attempts so that the 146 MIBR cannot penetrate friendly defenses before it is defeated.
  - Method: Battalion four rounds DPICM on company-sized (or larger) targets with repeat as necessary. Battery three rounds on smaller targets.
  - Effects: Friendly obstacles are not breached and 146 MIBR attack is defeated.

#### **DEVELOP AN “ARTILLERIZED” IPB**

4-17. A cornerstone to the MDMP is the IPB. If parallel planning is to occur, the maneuver unit/higher FA HQ S2 must provide the FA battalion with an accurate estimate of how the enemy plans to fight (i.e., an IPB). The FA battalion S2 must be proactive in obtaining as much information as possible, from the time the unit receives the first WARNO. (This is important as the S2 begins providing IPB information during the initial staff estimates discussed earlier.) A prioritized requirements list can facilitate this coordination and assist the maneuver/higher FA S2 in understanding the battalion's requirements. FSEs can also assist the battalion S2 in obtaining information.

4-18. The FA battalion S2 and staff must “artillerize” the IPB before other staff members can finalize their portion of the staff estimates. The artillery IPB process includes refinement of all provided IPB information and products (e.g., modified combined obstacle overlay (MCOO) and situation templates (SITEmps)) to focus on enemy fires assets, enemy systems that pose a threat to the battalion (e.g., air, ground), and survivability/mobility issues. For

example, the S2 must determine how the effects of climate and weather may impact achieved FA ranges and rates of fire (friendly and enemy) as well as the relative impact (Do the conditions favor either side?). The analysis must focus on the effects of the factors rather than just identification of raw data, as the staff uses the refined IPB in developing their staff estimates and FSP/FASP inputs. The S2 also further develops the FA battalion's PIR, and begins incorporating into R&S plans, the PIR that the maneuver/ higher FA HQ tasked the battalion to answer. Section II provides a step-by-step discussion of the FA IPB process.

4-19. The IPB products also support the FA battalion's participation in force targeting efforts. While targeting is a combined arms decide, detect, deliver and assess (D3A) effort, FA and FS personnel and agencies play integral roles in the process.

4-20. In developing the artillerized IPB, the FA battalion S2 must coordinate his work with the targeting personnel/cells in the appropriate maneuver and FA HQ. In a DS FA battalion the S2 works closely with the targeting officer in the brigade FSE, while in other FA battalions the targeting officer is part of the S2 section, directly assisting the S2 with IPB.

#### **REVIEW AVAILABLE ASSETS**

4-21. The staff translates raw facts and data into meaningful capabilities that allow the FA commander to clearly picture the battalion's ability to support the supported commander's intent. For example, 300 M825 smoke rounds may translate to five immediate smoke missions, three quick smoke missions and two average large smoke missions (by SOP standard planning factors). Time analysis is also critical, as the unit may have enough ammunition to fire the two large smoke missions, but not at the same time, or not in conjunction with other large fire missions.

4-22. This review includes assessment of the available assets, to include attachments, detachments, and supporting FA units as well as command relationships, and their implications for C2 and coordination. The staff should identify requirements for additional forces, external support, or changes in command relationships as early as possible.

4-23. The staff uses LPB methodology in preparing the CSS/logistic estimate. LPB is a continuous analysis of logistic factors affecting mission accomplishment. Emphasis is on how the status of CSS will impact on proposed COAs. Logistic planners use these estimates to recommend the best COA (that can be supported) and to develop plans to support the operations. Key concerns of battalion logistic planners are the status of Class III, IV, and V; and the operational status of FA weapons and FD equipment.

#### **DETERMINE CONSTRAINTS**

4-24. The staff determines any limitations that might influence task or mission accomplishment. These may be passed down from the supported maneuver or higher FA HQ, directed by the FA battalion commander, or identified by the battalion staff. In most battalions these will be listed in the FASP or its appendices. These limitations may consist of both restrictions and constraints as described below. While these are initially used for planning

purposes and may change, the final restrictions and constraints will be published and disseminated in the FSP, FASP, or WARNOs as appropriate. The commander and staff may need to address some of the restrictions and constraints during risk assessment and COA development.

### **Restrictions**

4-25. Restrictions are directive type limitations that prevent the unit from doing something that it may be capable of accomplishing. Examples of restrictions are:

- Restrictions on firing across or near international borders.
- Implementation of any type of restrictive fire measure.
- Restrictive minimum safe distance (MSD) guidance.
- Ammunition restrictions – e.g., prohibition against firing more than 40 percent of basic load during a reinforcing mission.

### **Constraints**

4-26. Constraints are frequently resource, terrain, or weather limitations that prevent or hinder a unit's ability to accomplish tasks or missions. Examples of constraints include:

- A critical resource shortage – such as fuel or ammunition (the latter may due to a relatively low CSR).
- The number of operational howitzers or launchers in a unit.
- Weapon, communication, or automation equipment problems or personnel shortages that result in degraded operations.
- Terrain that limits positioning and movement of firing units.
- Fog or other conditions limiting use of laser-designators.
- The hours of daylight available to accomplish a task or operation that relies on daylight (or the reverse – darkness for night operations).

### **IDENTIFY CRITICAL FACTS AND ASSUMPTIONS**

4-27. The staff determines critical facts and assumptions that can and will directly affect successful accomplishment of the mission. Some facts and assumptions will be contained in the maneuver or higher FA HQ orders, plans, or supporting documents. The staff verifies these and identifies others during mission analysis. The staff then lists all critical facts and assumptions for use during course of action development.

4-28. Facts are statements of known data concerning both the enemy and friendly situations. They include staff projections and assessments of tangible and intangible factors, such as, projection of Class V stockages and projections of forecasted replacement flow.

4-29. Assumptions are estimates that are developed when facts are not available. Assumptions must meet the tests of validity and necessity. An example of a valid assumption is "The enemy will use chemical weapons." If the enemy does use chemical weapons then the unit is prepared and can still accomplish the mission. Necessity defines whether or not the assumption is used in development of the plan. If the assumption is not necessary or



appropriate, then it should not be considered. Assumptions are replaced with facts as soon as possible.

#### **CONDUCT RISK ASSESSMENT**

4-30. The commander and staff identify risk hazards and make an initial assessment of the risk level for each hazard (e.g., radiation exposure guidance, immediate action guidance [receiving counterfire], MOPP-level operations, radar cueing scheduling). The battalion S2 can provide input on enemy artillery vulnerabilities to optimize desired effects on the enemy, which could reduce friendly risk if engaged. The commander, with staff input, determines whether or not the level of risk is acceptable and provides guidance as necessary on actions to reduce the level of risk or advising higher HQ of the situation. Higher HQ may dictate degree of risk. (See FM 101-5 for additional guidance).

#### **DETERMINE INITIAL COMMANDER'S CRITICAL INFORMATION REQUIREMENTS**

4-31. CCIR identify information the commander needs to visualize the battlefield, make key decisions, and determine or validate COAs. CCIR are normally expressed as PIR (information about the enemy), essential elements of friendly information (EEFI) - information needed to protect friendly forces from the enemy's information gathering systems, and friendly forces information requirements (FFIR) - information about the capabilities of his or adjacent units. CCIR are often contained in the higher HQ orders or plans, and may be specified tasks requiring battalion action.

4-32. The battalion commander may expand the CCIR listed in higher HQ or supported unit's plan in order to accomplish his mission. The commander and staff begin identifying all information requirements (IR) and CCIR upon receipt of the WARNO so that the staff can quickly initiate actions and coordination as necessary. (The commander, based on staff recommendations, determines which IR are CCIR.)

4-33. Further identification and refinement occurs during mission analysis, especially the "artillerized" IPB and wargaming processes. The FA commander and staff should choose CCIR that parallel the supported commander's (and/or higher FA HQ) and drives decisions at decision points. CCIR should be limited to a reasonable number to avoid loss of focus and overburdening staffs and collection assets. See FM 34-8-2, *Intelligence Officer's Handbook*, for additional information on CCIR.

#### **DETERMINE THE INITIAL RECONNAISSANCE PLAN**

4-34. The S3 and S2 review the battalion's specified and implied R&S tasks that support higher HQ R&S plans. This includes any PIR or IR tasked to the battalion. Based on the refined IPB, PIR, and IR, the S3, S2, and the commander may identify gaps in the intelligence collection plan of the supported unit (and/or higher FA HQ). The S3 provides this information to the appropriate maneuver/FA HQ S3 (or FSE) for inclusion in the higher HQ's R&S plan. The S3 and S2 also identify R&S requirements necessary to support the FA battalion's force protection plans. The S3 and S2 develop a battalion R&S plan utilizing available collection assets (e.g., survey, ammunition sections, radars, firing units, FOs, FISTs, COLTs/Strikers, and

FSOs). Battalion R&S requirements that are beyond the battalion's resources are passed to the appropriate maneuver/FA HQ for coordination and inclusion into higher R&S plans.

#### WRITE THE RESTATED MISSION

4-35. The battalion S3 and staff prepare a proposed restated mission for the commander's approval or modification. It should provide precise terms defining who, what, when, where, and why. Of the five, the commander and staff must especially understand the what and why, as these aid them in anticipating and addressing the many changes that occur in fluid combat situations and in understanding the timing and effects issues.

4-36. The restated mission should be more than a general statement of the battalion's FA tactical mission "provide DS FA fires". It should highlight one or more critical aspects of that support or the commander's priorities. An example is "On D-day, H-hour, 1/12 FA provides DS fires to first brigade, to weaken enemy forward defenses (10 minute preparation); to support the main attack battalion (close support fires); and to suppress or destroy enemy FA HPTs during final assault (counterfire program/critical friendly zone (CFZ) Wings), in support of the attack to seize and hold Objective Tiger. O/O 1/12 FA provides GS fires (primarily reactive counterfire against enemy mortars and FA in call-for-fire zone (CFFZ) Halo) to 1<sup>st</sup> Division, for approximately two hours, to support exploitation beyond phase line Maple by 2<sup>nd</sup> brigade".

4-37. The restated mission should not become a long list of all EFATs (they belong in paragraph 3a, Concept of Operations). Anticipate identification of additional EFATs during COA development, wargaming, and rehearsal.

#### CONDUCT A MISSION ANALYSIS BRIEFING

4-38. The mission analysis briefing should not be a unit readiness briefing to the commander. The staff must know the status of the battalion and supporting units and brief relevant information as it applies to the situation. The staff should develop standardized charts to monitor and consolidate this type of data to assist the commander in obtaining a quick snapshot of his unit. Time permitting, the staff should brief the commander on its mission analysis using the following format:

- **XO** – Introduction, Purpose, and Agenda.
- **S2** – Abbreviated IBP.
  - Weather and its impact on FA operations.
  - Terrain - MCOO, mobility corridors, avenues of approach (AOA).
  - Evaluation of threat capabilities to impact on the FA battalion's operations.
  - SITEMPs (most probable and most dangerous).
  - Enemy assets and vulnerabilities.
  - Recommended CCIR – PIR, EEFI, FFIR.
- **S3** – Results of mission analysis.
  - Current combat power and situation of units.
  - Current and projected task organization.

- Mission and commander's intent - two levels up.
- Specified, implied, and essential tasks (EFATs and EFSTs).
- Limitations (constraints and restrictions).
- Recommended mission statement.
- Additional assets required.
- Requests for information (RFI).
- Results of risk analysis.
- **S4** – Logistic status.
  - Current status of Class I (water [W]), III, and V.
  - Current and projected maintenance status.
  - Critical shortages or concerns.
- **S1** – Personnel status.
  - Current and projected personnel status.
  - Medical status (assets available and major health issues).
  - Critical shortages.
- **S6** – Communications status.
  - Current and projected maintenance status.
  - Status of communications and automation systems (FM, MSE, WAN/LAN).
  - Critical shortages.
- **XO** – Timeline review, to include rehearsal schedule and time hack.
- **Commander** – FA commander's initial guidance.

#### **APPROVE THE RESTATED MISSION**

4-39. Immediately after the mission analysis briefing, the commander should approve a restated mission. This can be the staff's recommended restated mission, a modified version, or one that the commander has developed himself. Once approved, the restated mission becomes the battalion's mission.

#### **DEVELOP THE INITIAL FA COMMANDER'S INTENT**

4-40. After reviewing the mission analysis briefing and approving the restated mission, the commander finalizes his intent statement. The FA commander's intent is his personal expression (in broad terms) of:

- The critical tasks to be executed (e.g., counterfire, destroy dismounts, cover obstacles, attrit/disrupt first echelon).
- The purpose of the FA fires in support of the supported force (e.g., delay second echelon to allow attrition of first echelon, protect the force with counterfire to allow freedom of maneuver).
- The methods used by the FA battalion to assist the supported force in achieving the effects (e.g., initially position observers and firing units forward to delay lead elements with dual purpose, improved conventional munitions (DPICM) fires, destroy C2 elements with Copperhead fires, fire SCATMINE and smoke to delay and disrupt the second echelon).

- The effects or criteria for success (e.g., enemy unable to mass his direct and indirect fires against the brigade and we are in position to support the follow-on mission).

4-41. The FA commander's intent links his vision of the end state and the FA concept of operations (details of the "how to" written by the staff). It also provides linkage with the maneuver and higher FA HQ commanders' intent for fires.

## ISSUE THE COMMANDER'S GUIDANCE

4-42. After the commander approves or issues the restated mission and states his intent, he must provide additional planning guidance to the staff. The intent of the commander's guidance is to establish guidelines and implant his vision of the operation into the minds of his staff to enable them to plan the FA operations consistent with his and the supported commander's (and/or higher FA HQ) intentions. When time is not significantly limited, this guidance can be general in nature, therefore, providing the staff maximum latitude. As time becomes more constrained, this guidance must be more specific and directive. Commander's guidance should address (but not be limited to) the following:

- Priority of EFATs, guidance on methods to accomplish each, and clarification on effects for each.
- COA development guidance – to include number of friendly FA COAs and enemy FS COAs to consider and decisive points (especially those where he expects fires to play a critical role).
- CSS priorities.
- Type of order to prepare.
- CCIR and RFI.
- Positioning priorities and deception guidance.
- Munitions mix (CCLs) and distribution.
- C2 and liaison arrangements.
- Radio retrans guidance.
- Survey and R&S priorities and guidance.
- Risk guidance.
- Timeline guidance.
- Rehearsal guidance. (See Section III for additional information.)

## ISSUE A WARNING ORDER

4-43. Immediately after the commander gives his guidance, the S3 will send the batteries and supporting units a WARNO that contains, as a minimum:

- Intelligence update.
- The restated mission.
- AO and known mobility/countermobility information.
- The FA commander's intent, and that of the supported maneuver commander and the FA/maneuver commanders two levels up.
- Prioritized EFATs and any other key priorities.
- Timeline estimates – planning/rehearsal/execution.

- CCIR.
- Risk guidance and survivability guidance.
- Reconnaissance.
- Guidance on rehearsals.
- Precombat inspection (PCI)/PCC priorities.
- Other known details.

## REVIEW FACTS AND ASSUMPTIONS

4-44. During the decision-making process, the commander and staff must periodically review all available facts and assumptions. New facts may alter requirements and analysis of the mission. Assumptions may have become facts or they may have become invalid. Whenever the facts or assumptions change, the commander and staff must assess the impact of these changes on the plan and make the necessary adjustments.

## COA DEVELOPMENT

4-45. In a DS FA battalion, the FSCoord and FS personnel participate in the maneuver unit COA development and FA fire planning is an integrated part of the maneuver MDMP. In all FA units, the staff analyzes possible FA COAs to determine the best COA to support the higher HQ mission. This effort often begins when the first WARNO is received. Each FA COA must be **feasible** (able to be accomplished with current or projected resources), **acceptable** (contains acceptable levels of risk), **suitable** (consistent with the commander's guidance and intent), **distinguishable** (if more than one), and **complete** (answers who, what, when, where, why, and how).

- **Who** - The type of unit supported.
- **What** - The type of operation supported and EFATs for the battalion.
- **When** - The time action will begin or must be completed by (e.g., on-order, D-day, H-hour, or specific DTG for artillery FS activities).
- **Where** - The assigned AO, such as PAs and routes, in the supported unit sector.
- **How** - The method the FA battalion will use to conduct or execute its EFATs in support of the operation.
- **Why** - The purpose of FA fires, and/or fires in general, in support of the mission.

4-46. The COAs that a FA battalion will develop and evaluate will address the various methods or options that the FA unit has to accomplish its mission and tasks. These may include different movement plans, tactical or technical FD controls (fire mission routing, sensor-to-shooter links, as examples), task allocations, positioning, logistics plans, or other aspects of FA operations. The FA battalion is not evaluating the maneuver or force FA HQ COAs, but rather its ability to support the operation. One technique for developing a FA COA includes:

- Review EFSTs and supporting EFATs.
- Task subordinate units (who, what, when, where, why – and how, if time constrained).
- Determine command post and trains configuration.

- Address fundamentals of the battlefield operating systems (BOS) (for CSS, it could be the tenets of CSS; for FA, it could be the five requirements for accurate, predicted fire).
- Task organic sections (usually part of the headquarters element). Again, indicate the who, what, where, when, and why.
- Graphically and/or verbally explain the COA, ensuring every specified and implied task is accounted for.

#### **ANALYZE RELATIVE COMBAT POWER, FACTS, AND ASSUMPTIONS**

4-47. First, the S2 focuses on artillery ratios to help determine what assets are needed to accomplish EFATs. By analyzing FA ratios and determining and comparing each force's FA strength and weakness as function of combat power, the staff can gain some insight into friendly FA capabilities in support of the operation. The analysis can also reveal what FA operation may be possible from both a friendly and an enemy perspective and FA vulnerabilities (friendly and enemy). (The FS estimate conducted by the FSE or supported unit should be the start point or extension for this analysis. The FA S2 must also understand the overall relative combat power assessment prepared by supported and higher HQ.)

#### **GENERATE OPTIONS**

4-48. Based on this analysis and the FA commander's guidance, the staff generates options for FA COA development in support of the mission. Brainstorming is the preferred technique for generating options. Once the staff has explored various concepts, they should examine each to determine if it satisfies COA selection criteria.

#### **ARRAY INITIAL FORCES**

4-49. The S3 and S2 should integrate the SITEMP into the COA development. The S3 overlays the SITEMP (see Section II for information on SITEMP) on the operations map and deconflicts positioning of firing units, critical nodes, and radar positions given the impending situation. The S3 ensures that PAs are not on enemy AOAs, regimental objectives, or other conflicting areas. It is very difficult to position out of range of the threat's artillery so the S3 should consider positioning units in areas that will cause artillery delivery problems for the enemy's artillery systems (e.g., sight to crest, intervening crest, and traverse limit problems). The staff conducts this process to eliminate PAs that do not meet the above criteria. Given the remaining PAs, the S3 can now narrow the focus of FA COAs to support the mission.

#### **DEVELOP THE SCHEME OF MANEUVER (MOVEMENT PLANS)**

4-50. The S3 section posts the MCOO on the operations map underneath the operations graphics overlay. The O&I section plots the HPTs or critical target areas (areas where the supported commander plans to engage HPTs, TAIs, chokepoints, NAIs, trigger points, etc.) by phase based on the HPTL, fire plans, templates, etc. The BAO and/or FDC provides the S3 with ammunition information (types and quantities of propellants, projectiles, rockets, missiles) for the upcoming mission. With this information the S3 and BAO determine which munitions mix is available in the greatest amounts. The S3 uses the

range of the greatest percentage of propellant/shell (rocket/missile) mix available to the battalion to determine the planning range. This process avoids a common pitfall--using the wrong planning range to choose PAs. This information, passed through FSO channels, also provides the maneuver commander with the predominant range capability of his FS systems.

4-51. Using the correct planning range, the S3 draws range fans starting from the HPTs or critical target areas back to the proposed PAs. All PAs on the MCOO that are inside these range fans are identified as optimal PAs to engage HPTs or critical target areas. PAs outside of the range fans are identified as less than optimal. Units in less than optimal PAs will be required to expend propellants and munitions that are in short supply (e.g., rocket assisted projectiles [RAP]) to range the target area. During this process the FDO refines the optimal ranges given the conditions of accurate predicted fires. The FDO must ensure he addresses issues of powder temperature, gun above or below target, high angle fire requirements, and met data.

4-52. Once the S3 identifies the optimal PAs for each target area, by phase, he copies them onto the operations overlay and gives the MCOO back to the S2. There are times when the S3 must use less than optimal PAs and he does so understanding the constraints of those PAs. The FDO looks at each PA and identifies any technical fire delivery issues (e.g., site to crest, intervening crest, traverse limits) that must be resolved. When any of these issues are identified, the FDO should shoot a "dry" mission in the computer using data from the PA to determine if the identified concerns are valid. If the S3 directs occupation of any of these PAs, the FDO addresses these identified issues with the battery FDC during the battalion FA technical rehearsal.

4-53. The S3 (and brigade FSO) should perform a quality control check of the FA/FS scheme of maneuver to ensure it addresses:

- Battery/TOC/CSS movement plans, at least into primary positions.
- Alternate and supplementary positions.
- Azimuths of fire and planning range fans.
- EFST/EFAT requirements and key subordinate tasks.
- R&S requirements (radar support and coverage areas).
- Survey, met, engineer, and ADA support.
- C2 and CSS plans.
- Priorities of support.

#### **EXAMINE C2 CONSIDERATIONS**

4-54. The S3 examines C2 considerations that will influence support to the supported unit (e.g., FSCMs, radar zones, retrans stations, establishment of quickfire channel).

#### **PREPARE COA STATEMENTS AND SKETCHES**

4-55. The S3 prepares a COA statement and supporting sketch (containing PAs, movement plan, FSCMs, planning range fans, radar coverage, listing of EFATs, etc.) for each possible FA COA. Together, the statement and sketch should cover who, what, when, where, how, why, and any significant risks. At

this point, the S3 should have well defined EFATs, each containing a specific task, its purpose, method of accomplishment, and task effects (desired results).

#### **BRIEF COMMANDER AND REFINE COA**

4-56. After the COAs have been developed, they are briefed to the commander for review. After the briefings the commander gives any additional guidance. If he rejects all COAs, the staff must begin again. If he accepts one or more of the COAs, they begin the wargaming process. The COA briefing may include:

- Update intelligence.
- Possible enemy employment of FA assets (SITE MP).
- The restated mission.
- The supported commander's intent for FS/FA.
- The COA statement and sketch.
- The rationale for each COA.

#### **COURSES OF ACTION ANALYSIS (WARGAME)**

4-57. COA analysis is wargaming the COA(s). It is a critical step that ensures the development of a fully integrated and synchronized support plan. In DS FA units, the FSCoord/FSOs will participate in the supported unit's wargaming process. The steps of the wargame process are:

- Gather the tools, materials, data, and draft event template.
- List all friendly forces (display FA units by platoons or batteries).
- List assumptions, to include higher HQ.
- List EFSTs/EFATs and known decision points.
- Determine evaluation criteria to measure the relative effectiveness and efficiency (e.g., list EFSTs/EFATs, their purpose, method used to accomplish the tasks, and desired effects).
- Select the wargame method and a recording technique (see FM 101-5).
- Wargame the battle with emphasis on FA fires (use the procedures in the paragraphs below).

#### **WARGAMING**

4-58. Wargaming the COAs is critical to ensure the battalion can provide effective fires in support of the mission. The wargaming process is as follows:

##### **Create a DST**

4-59. Create a DST that relates the details of the event template to decision points that are of significance to the battalion. (A maneuver unit/higher FA HQ DST may assist the FA battalion, especially DS units.) This is accomplished by overlaying the event template on the operations graphic to depict time phase lines (TPLs) on the battlefield (see Section II for additional information on event template/TPLs refinement). The S3 then lists the EFATs for the battalion. These may be battalion mass missions, special munitions missions, unit movements, reconnaissance, or survey emplacement. The DST does not dictate decisions to the S3, but rather identifies critical events and threat activities relative to time and location



that may require tactical decisions. The DST provides a structured basis for using experience and judgment to reduce battlefield uncertainties.

#### **Wargame Each EFAT**

4-60. Wargame each EFAT in order. The S2 discusses timing of the battle off his TPLs, the S3 addresses how the EFAT accomplishes the EFSTs, and the FDO briefs mission execution times (time of flight, shift times, first round to last). The wargame sessions may cover the entire operation or a particular phase.

#### **Wargame the Fire Plan(s)**

4-61. Wargame the fire plan(s) to determine if they are executable. The S2 describes what the enemy is doing and their rate of march, the S3 adds the type of target, the FA impact area (front, center, or rear of formation) and the number of rounds and volleys required. The FDO then states whether or not the battalion is laid on the target, who will fire the mission, shift time required, time of flight, and total time to execute the mission. It is critical that honest times, based on the unit's current level of training and not standard times from MTP manuals, are used. Given this information and using TPLs, place a decision point (star) on the operations graphic that represents the last time on the battlefield, when the enemy reaches this point, the FA can achieve its greatest effects. Two points are worth emphasizing:

- First, decision points established by the FA battalion in the forward battle area should correspond to the trigger points of the supported unit that is watching the decision point, unless the FA battalion has organic assets observing the area. For DS FA units, the decision points may be the same as those of the supported maneuver unit, or they may be decision points unique to the FA battalion.
- Second, as the S2 identifies threat forces at or near the decision points he alerts the S3 and FDO, who ensure the FA battalion is prepared to fire any missions tied to the decision points. FSOs should know the mission execution times of all supporting battalions.

#### **Determine Other FA Decision Points**

4-62. Use the FA battalion DST to determine decision points for critical FA events such as unit movements, special munitions missions, radar cueing, CSS operations, etc. In the same manner as described above, the S3 and the staff wargame the battle. They determine where to place decision points that will trigger specific critical events. For example, the S3 could establish a decision point to cue the radar to observe a breaching operation when lead elements of the breach force report their location at a certain point.

#### **Display Decision Points on Operations Overlay**

4-63. Graphically depict each decision point on the operations overlay. This will assist in focusing the staff on critical events that must occur during the battle. Time permitting, the staff may develop a FASM (see Appendix A for example) that addresses by unit, each task they are required to execute (usually created after the commander's decision on COA selection).

## COA COMPARISON

4-64. After analyzing each COA, the S3 evaluates how each COA will meet certain predetermined criteria. The criteria should be fairly explicit, quantifiable, and unique to the situation. Initially evaluate each COA against the criteria, not each other, to prevent bias. Clearly identify the criteria standards prior to the comparison. (e.g., If the COAs require 2, 3, and 6 moves respectively are they rated 1, 2, and 3 or 1, 1, and 3?) The comparison ultimately leads to a staff recommendation of one COA to the commander. Table 4-1 is an example of a COA comparison matrix.

**Table 4-1. COA Comparison Matrix (Example)**

CRITERIA	WEIGHT	COA 1	COA 2	COA 3
Accomplishment of EFATs, especially #1,2, & 5	4	1 = (4)	3 = (12)	2 = (8)
Logistical resupply – Class V & III	3	2 = (6)	3 = (9)	1 = (3)
FA maneuver – Min of 2 Btrys available - Ph I & IV	3	2 = (6)	1 = (3)	3 = (9)
C2 – especially during EFATs #1, 2 & 5	3	1 = (3)	3 = (9)	2 = (6)
Counterfire operations – during Phases I & IV	2	3 = (6)	2 = (4)	1 = (2)
Simplicity – fewest moves	3	1 = (3)	2 = (6)	3 = (9)
Survey operations – requirements for hasty survey	1	1 = (1)	2 = (2)	3 = (3)
Met operations – distance and time validity	1	2 = (2)	1 = (1)	3 = (3)
Force protection – exposure to ground attack	3	1 = (3)	3 = (9)	2 = (6)
Future operations – tubes, critical ammo, PAs	2	3 = (6)	2 = (4)	1 = (2)
Numerical Total		17	22	21
Weighted Total		(40)	(59)	(51)
1 (lower) = better				

## COA APPROVAL

4-65. The commander may agree with the recommendation, modify it, or select another. Once the commander makes his selection, the staff immediately issues a WARNO with essential information so batteries and supporting units can refine their plans.

## FSP / FASP PRODUCTION

4-66. Based on the commander's selected COA and final guidance, the units finalize schedules of fires and prepare the FSPs and FASPs as addressed below. Once approved by the commander(s), the FSP and/or FASP are disseminated, rehearsed, and executed. Section III addresses rehearsals in more detail.

## SCHEDULING FIRES

4-67. The FA fire planning process is a cooperative effort involving close coordination between personnel in FSEs and FA TOCs. The FA battalion S3 usually directs the final stages of the process and the preparation of approved FA fire plans and schedules as he has the most current and anticipated status of the firing units. The final approving authority is usually the supported

maneuver commander or FSCoord, or in some cases, the FA commander responsible for a specific FA mission.

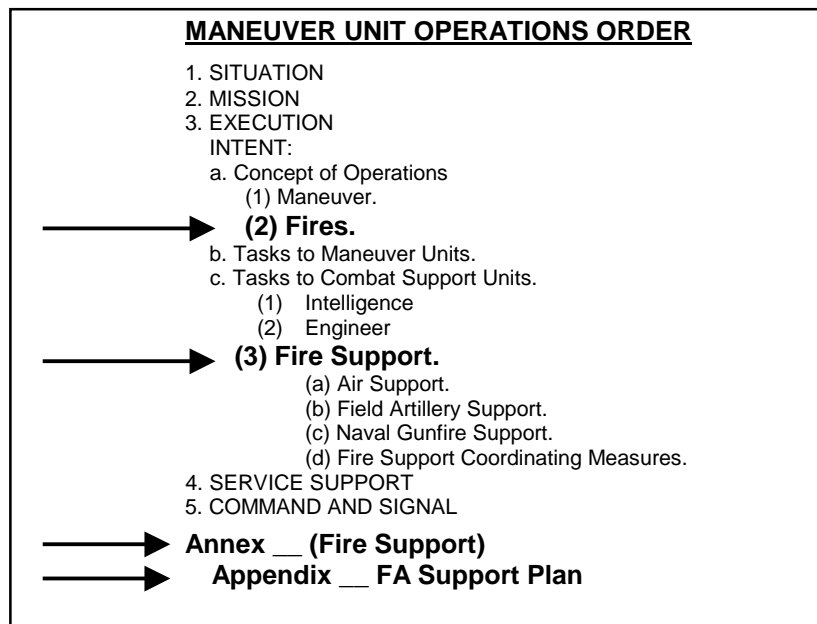
4-68. In a DS/R FA battalion scenario, the FSEs, on the basis of the maneuver commander's guidance for fires, plan and tentatively schedule targets to be fired by the FA units. Ultimately, the DS FA battalion S3, working with the brigade FSO and the reinforcing unit S3 (when applicable), refines all of the requested fires into one or more FA fire plans. The fire plan(s) includes all on-call and scheduled individual targets, groups, series, programs, preparations, counterpreparations, and/or other targets or schedules of fires that must be fired at a specific time or event and/or in a predetermined time pattern. Each fire plan may support a particular plan, phase, event, or a specific FA task.

4-69. Fire planning and scheduling for GSR/GS units may primarily be done by the higher FA HQ as part of the overall fire planning effort. GSR/GS units may receive completed fire plans and schedules assigning their responsibilities. However, they may also be given targeting data and specific missions or tasks, and required to develop their own fire plans and schedules. An example would be a GS FA battalion given the mission to fire a SEAD program in a designated zone as part of a deep attack helicopter operation. The FA brigade HQ may give the battalion the mission and general guidance. The battalion then conducts the target development and coordination with the aviation brigade or attack helicopter battalion FSE to prepare the program and establish a trigger or method of fire control.

4-70. Appendix B addresses specific scheduling techniques, considerations, and definitions of scheduling terms. While the appendix primarily addresses manual targeting and fire planning, much of the information is also applicable to fire planning in general and must be read to fully understand automated fire planning.

## **FIRE SUPPORT PLAN**

4-71. The FSP, developed in the FSE, outlines the integration and synchronization of all FS assets into the scheme of maneuver. A simple FSP may consist of only the fires portion of the concept of operations subparagraph in the maneuver OPORD and the FS subparagraph (See Figure 4-2). The FS subparagraph includes a section for each FS agency involved in the operation. The appropriate FS representatives (air force, naval, etc.) prepare their input.



**Figure 4-2. Elements of a Fire Support Plan**

4-72. If the FSP requires amplification that is too extensive for the FS subparagraph, the FSE publishes a FS annex to the maneuver OPORD. The combined information in the fires/FS subparagraphs, FS annex, and any FS related enclosures or appendices then constitute the FSP. The FSP may include a FASP as an appendix to the FS annex. For detailed information on the FSP refer to FM 6-20-30, FM 6-20-40, or FM 6-71.

#### **FIELD ARTILLERY SUPPORT PLAN**

4-73. The FASP is a tactical plan for employing all organic, assigned, attached, and supporting FA assets. It disseminates the maneuver/FA commander's guidance, assigns responsibilities for FA tasks (such as EFATs), and outlines the commander's concepts for FA fires, movement, C2, TA, CSS, and force protection. The FASP is one of the products of the battalion's MDMP. A FA battalion prepares one of two basic types of FASPs depending on its FA tactical mission.

#### **DS BATTALION FASP**

4-74. A DS FA battalion prepares a comprehensive FASP that covers the employment of **all** FA assets in support of a maneuver operation, to include reinforcing units, attached radars, or other FA assets. The battalion develops the FASP as part of the larger combined arms MDMP process. The FASP is based primarily on the supported maneuver and FA battalion commanders' guidance and intent for fires, the scheme of maneuver, the concept for fires, and higher HQ OPORDs, FSPs, FASPs, and guidance. The DS battalion FASP usually becomes an appendix to the FS annex in the maneuver OPLAN/OPORD. Thus the DS battalion is integrally involved in development of both EFSTs and EFATs.

4-75. The DS FA commander, as both the FSCoord and the force FA commander, must ensure that the FSO and the FA battalion S3 closely coordinate preparation of the FSP and the FASP. The FA battalion S2 coordinates IPB, TA, and targeting with the targeting officer in the FSE and with the maneuver S2. The S6, S1, and S4 also coordinate key aspects of their functional areas with their maneuver staff counterparts, and the brigade FSE as appropriate. The commander and staff of a reinforcing FA unit will also participate closely in the FASP development.

#### **R/GSR/GS BATTALION FASP**

4-76. A FA battalion with a R mission may develop a joint FASP with the DS battalion or develop an independent FASP, in a parallel process synchronized with the DS battalion's MDMP. A FA battalion with a GSR, or GS mission usually develops its own FASP in a parallel process coordinated with the MDMP of the supported FA unit or higher FA HQ. This type of FASP generally addresses only battalion unique requirements and directives not covered in the FASP of the supported or higher FA HQ or unit SOP. It also provides the FA commander's concept, intent, and guidance for execution of the battalion's mission. It is not published as part of a maneuver OPORD.

4-77. R, GSR, or GS FA battalion may not need to publish a full FASP. If the reinforced or higher FA HQ FASP is detailed enough, a R, GSR, or GS battalion may issue only a FRAGO that provides the limited additional information needed. This is possible when the commander and staff of a R, GSR, or GS unit directly participate in the preparation of the FASP prepared by a DS battalion, FA brigade, DIVARTY, or Corps Arty.

#### **FASP PREPARATION AND DISSEMINATION**

4-78. The FA battalion S3 and the operations section have primary responsibility for preparation and dissemination of the FASP. All staff sections provide/prepare their input as outlined in unit SOP. The XO ensures staff coordination and quality control, and encourages cross-talk between internal and external staff elements during the process.

4-79. A FA battalion can use any of several formats to include: a formal, five-paragraph field order format, a FASM, FRAGOs, or oral orders, depending on time available. Newer C2 systems, such as AFATDS and MCS, allow automated preparation and dissemination of the FASP. See Appendix A for information on FASP content and a description of the FASM.

4-80. The FA battalion disseminates copies of the FASP to all subordinate and reinforcing FA units, any attached or supporting elements, and force FA HQ. The unit may supplement the FASP with verbal updates or FRAGOs detailing changes, additions, etc.

## SUMMARY

4-81. The following table provides an overview of the FA battalion MDMP.

Table 4-2. FA BN Planning Process

MDMP STEP	INPUTS	ACTIONS	OUTPUTS
<b>Receipt of Mission</b>	<ul style="list-style-type: none"> <li>Higher HQ WARNO or OPORD, FSP, FASP.</li> <li>All available/updated internal &amp; external data.</li> </ul>	<ul style="list-style-type: none"> <li>Evaluate higher HQ information – mission/task/guidance focus.</li> <li>Initiate staff estimates FS, FA Ops, Intel/TA, C2, &amp; CSS &amp; data collection.</li> <li>Identify draft CCIR.</li> <li>Conduct time analysis.</li> </ul>	<ul style="list-style-type: none"> <li>Initial EFST/EFAT list.</li> <li>Initial staff estimates &amp; briefs to FA Bn Cdr.</li> <li>Draft CCIR/RFI.</li> <li>Initial timeline for MDMP &amp; rehearsals.</li> <li>Initial Cdr guidance</li> <li>WARNO.</li> </ul>
<b>Mission Analysis</b>	<ul style="list-style-type: none"> <li>Higher HQ (Mvr/FA) OPORD, FSP, FASP</li> <li>Facts from higher, lower, supported, supporting, &amp; adjacent elements (to include FSEs).</li> <li>IPB Products (MCOO, SITEMPs).</li> <li>CCIR.</li> <li>Enemy COA from S2.</li> <li>HVTs by phase or critical event.</li> <li>Outputs from previous step.</li> <li>Internal/external replies to CCIR/RFI.</li> </ul>	<ul style="list-style-type: none"> <li>Understand 2 higher maneuver orders/FSPs &amp; FASPs.</li> <li>Identify specified &amp; implied tasks.</li> <li>Identify CCIR.</li> <li>Organize and analyze facts.</li> <li>Translate facts &amp; status of FS/FA/TA assets into capabilities, limitations &amp; constraints.</li> <li>Analyze effects of IPB on FS/FA/TA.</li> <li>Develop draft EFSTs &amp;/or EFATS.</li> <li>Refine staff estimates FS, FA Ops, Intel/TA, C2, CSS.</li> <li>Initiate TVA.</li> <li>Identify potential wargaming &amp; rehearsal aids (models, tables, maps, sketches, &amp; audio/visual [AV] equipment).</li> <li>Refine rehearsal plan (Timelines, C2 &amp; FATDS/database requirements).</li> <li>Develop mission analysis brief.</li> </ul>	<ul style="list-style-type: none"> <li>Updated staff estimates.               <ul style="list-style-type: none"> <li>- Facts &amp; Assumptions.</li> <li>- Constraints &amp; restrictions.</li> <li>- Critical shortage lists.</li> <li>- Artillerized IPB products (MCOO, SITEMPs, enemy COAs).</li> </ul> </li> <li>CCIR, RFI</li> <li>Restated mission.</li> <li>Specified &amp; implied tasks.</li> <li>Approved EFSTs &amp;/or EFATs.</li> <li>Cdr's guidance and intent.</li> <li>Mission analysis brief.</li> <li>Initial movement, C2, CSS, fires (fire control and schedules), &amp; R&amp;S plans/concepts.</li> <li>Updated timelines.</li> <li>WARNO.</li> </ul>
<b>COA Development</b>	<ul style="list-style-type: none"> <li>See outputs from previous step.</li> <li>Higher HQ updates (Mvr/FA).</li> <li>Internal/external replies to CCIR/RFI.</li> </ul>	<ul style="list-style-type: none"> <li>Develop FA Bn COAs in synchronization with Mvr/higher FA COAs.</li> <li>Identify FS &amp;/or FA decision points &amp; firing unit/FC options.</li> <li>Determine where to find and attack EFST/EFAT formations.</li> <li>Identify HPTs in those formations.</li> <li>Quantify the effects for EFSTs/EFATs.</li> <li>Plan D3A methods for EFSTs &amp;/or EFATs, to include triggers.</li> <li>Integrate triggers with Mvr/higher FA COA.</li> <li>Allocate assets to acquire &amp; attack.</li> <li>Develop draft targeting &amp; fire plans products.</li> <li>Identify FA/TA PAs, routes, movement &amp; timing options.</li> <li>Identify FA trains/CSS options (FA ammo distribution &amp; resupply options).</li> <li>Use battle calculus to test feasibility.</li> <li>Refine R&amp;S plan.</li> </ul>	<ul style="list-style-type: none"> <li>For each COA developed:               <ul style="list-style-type: none"> <li>- COA statement &amp; sketch</li> <li>- Concept of fires</li> <li>- Draft FSEM/FASM</li> <li>- Draft target lists/overlay</li> <li>- Draft/modified TSM</li> <li>- Changes/differences in FS/FA guidances, TSS, IPs, fire order standards.</li> <li>- Basic schedule of fires requirements.</li> <li>- R&amp;S plan differences.</li> </ul> </li> <li>Refined MCOO &amp; SITEMP.</li> <li>Wargaming aids (charts, sketches, overlays, handouts, models, AV requirements).</li> </ul>

Table 4-2. FA BN Planning Process (Continued)

MDMP STEP	INPUTS	ACTIONS	OUTPUTS
<b>COA Analysis and COA Comparison</b>	<ul style="list-style-type: none"> <li>See outputs from previous step.</li> </ul>	<ul style="list-style-type: none"> <li>Targeting decisions: finalize HPTL &amp; TSM.</li> <li>Wargame the FA Bn COA &amp; FASP(s) vs. enemy COAs.</li> <li>Wargame the brigade COA &amp; integrated FSP(s) vs. enemy COAs (DS units).</li> <li>Modify/refine inputs as required.</li> <li>Test &amp; refine FSP &amp;/or FASP.</li> <li>Finalize staff estimates FS, FA Ops, C2, Intel/TA, CSS.</li> <li>Finalize/coordinate draft target lists &amp; schedules of fire.</li> <li>Refine/finalize CCIR.</li> <li>Prepare/modify draft FASP/FSP.</li> </ul>	<ul style="list-style-type: none"> <li>COA decision matrix</li> <li>Refined MCOO &amp; SITEMP.</li> <li>Detailed task organization.</li> <li>Refined staff estimates.</li> <li>Refined risk estimate.</li> <li>Refined CCIR &amp; RFI.</li> </ul> <p><u>Final Drafts:</u></p> <ul style="list-style-type: none"> <li>Fires paragraph.</li> <li>FSP/annex (DS units): FSEM Target list/overlay TSM or modified TSM (HPTL, AGM, TSS)*</li> <li>FASP: FASM Fires schedules RDO &amp; R&amp;S plan</li> </ul>
<b>COA Approval</b>	<ul style="list-style-type: none"> <li>See outputs from previous step.</li> </ul>	<ul style="list-style-type: none"> <li>Conduct Mvr Bde/FA Bn approval briefing.</li> <li>FSCoord/FSO presents analysis to Mvr Cdr as part of staff.</li> <li>FA Bn XO/S3 presents analysis to FA Bn Cdr as part of staff.</li> <li>FSP/FASP briefed as part of each COA.</li> <li>Mvr Bde/FA Bn Cdrs direct changes and approve COAs as appropriate.</li> </ul>	<ul style="list-style-type: none"> <li>Approved/modified FA Bn COAs (&amp; Mvr/FS COAs for DS units).</li> <li>Cdr/XO issues OPORD, FSP, FASP guidance (format, coordination, addressees, timelines)</li> <li>FA staff/FS back briefs.</li> <li>Issue final rehearsal guidance/information.</li> <li>Issue WARNO as required.</li> </ul>
<b>Orders Production</b>	<ul style="list-style-type: none"> <li>See outputs from previous step.</li> </ul>	<ul style="list-style-type: none"> <li>Finalize staff and other inputs/products.</li> <li>Gather all inputs, prepare and quality check final FA/FS products.</li> <li>Verify receipt &amp; understanding.</li> <li>Gather &amp; evaluate lower/higher feedback &amp; rehearsal results.</li> <li>Recommend post-production changes and updates as necessary based on rehearsal results, feedback, and METT-TC changes to the Cdr for decisions.</li> <li>Prepare modified products, WARNOS &amp;/or FRAGOs to reflect changes &amp; Cdr decisions.</li> </ul>	<ul style="list-style-type: none"> <li>Issue OPORD/OPLAN, FSP, FASP.</li> <li>Disseminate post-production changes &amp; updates via WARNOS/FRAGOs.</li> </ul>

\* An example of a combined HPTL/AGM/TSS/Collection Plan is provided in Figure 4-3. This is only an example of one format that can be used to display HPTL, AGM, and TSS information.

<b>HPTL/AGM/TSS/Collection Plan</b>											
Phase: <u>II</u>		High Payoff Targets						DTG: _____			
Priority	1	2	3	4			Remarks				
Target Description	ADA Assets	Enemy Artillery	C3	RSTA Assets							
Remarks	SA 6/8 SA 9/60 ZSU-23-4	2S5/7 BM 21/22 SCUD/Frog	BDE CPs DIV CPs Signal Assets	Long Track/FlatFace Cymbeline Div Recon							
<b>W e a p o n / A t t a c k s y s t e m</b>	155mm	1. 50m 2. SEC 3. S 4. 30 min	3	1. 100m 2. BTRY 3. S 4. 10 min	3	1. 200m 2. Co 3. S 4. 120 min	4	1. 50m 2. SEC 3. S 4. 60 min	2		
	MLRS	1. 200m 2. SEC 3. S 4. 30 min	2	1. 200m 2. BTRY 3. S 4. 10 min	2	1. 200m 2. Co 3. S 4. 120 min	3	1. 200m 2. SEC 3. S 4. 60 min	3		
	ATACMS	1. 500m 2. SEC 3. S 4. 30 min	2	1. 500m 2. BTRY 3. S 4. 10 min	6	1. 200m 2. CO 3. S 4. 120 min	3	1. 200m 2. SEC 3. S 4. 60 min	6		
	ATK Helo	1. 500m 2. SEC 3. S/M 4. 90 min	5	1. 500m 2. SEC 3. S/M 4. 60 min	1	1. 200m 2. Co 3. S/M 4. 120 min	5	1. 500m 2. SEC 3. S 4. 60 min	1		
	CAS	1. 500m 2. SEC 3. S/M 4. 30 min	6	1. 50m 2. SPL 3. S/M 4. 60 min	5	1. 200m 2. Co 3. S/M 4. 120 min	2	1. 500m 2. SEC 3. S/M 4. 90 min	5		
	AI	1. 500m 2. SEC 3. S/M 4. 30 min	1	1. 500m 2. SPL 3. S/M 4. 60 min	3	1. 200m 2. Co 3. S/M 4. 120 min	2	1. 500m 2. SEC 3. S/M 4. 90 min	1		
	EW	1. 5K 2. SEC 3. S 4. 30 min	4	1. 5K 2. BTRY 3. S 4. 60 min	4	1. 5K 2. Co 3. S 4. 120 min	1	1. 5K 2. SEC 3. S 4. 60 min	4		
	Trigger Sensor	1. Quickfix Guardrail 2. OH58D 3. TUAV		1. Q36/37 2. LRSD 3. JSTAR		1. LRSD 2. Quickfix Guardrail 3. JSTAR		1. JSTAR 2. CAS/AI 3. GSRs			
When	I/P	I/A	A	I/P							
Damage	D	N	S	N							
BDA Required	Y	Y	N	Y							
REFERENCES: <input type="checkbox"/> Priority of Attack: 1. TLE=Max, 2. TGT Size=Min. 3. Target Activity=Stationary(S)/Moving(M), 4. Valid Acquisition Time											
WHEN: I=Immediate A=As Acquired P=Planned, DAMAGE: S=Suppress N=Neutralize D=Destroy, BDA Required: Y/N											

Figure 4-3. HPTL/AGM/TSS/Collection Plan



## SECTION II – FA INTELLIGENCE PREPARATION OF THE BATTLEFIELD

4-82. This section discusses how to conduct an FA IPB and to incorporate it into the battalion's MDMP. The S2 must expand the supported maneuver unit and/or higher FA HQ IPB products, particularly the threat data, to focus on survivability and mobility issues for the FA battalion. The S2 must answer, "How can the threat and terrain affect my FA unit?" FM 34-130, *Intelligence Preparation of the Battlefield*, contains detailed IPB information.

4-83. The FA battalion S2's order of battle studies must focus on:

- Threat Maneuver Force Doctrine
  - Enemy task organization to include signature items (e.g., equipment that uniquely identifies the type of enemy force or the main effort).
  - Numbers and capabilities of vehicles by type (e.g., light vs. heavy, amphibious, gasoline vs. diesel, caliber/range).
  - Formations used.
  - Movement rates: Day, night, MBA, pre-battle, battle, etc.
  - Depth and width of the brigade (or regiment), battalion, and company (battery) in both offense and defense.
  - The threat SOF or specialized threat forces present to the FA battalion and rear area operations.
  - Threat air assets (fixed/rotary-wing), doctrine, capabilities, and vulnerabilities.
- Threat Artillery Doctrine and Capabilities
  - Weapon types and the number of tubes per battalion.
  - Capabilities of each system: Ammunition, ranges, rates of fire.
  - Dispositions: Deployment considerations, distances between firing units and specific artillery groupings.
  - Counterfire capability: Radars, ranges, typical locations, time from acquisition of incoming rounds to time counterfire mission is fired.
  - Enemy EW and reconnaissance threat to friendly counterfire radars: Detection capability, jamming capability.
  - Types of fire by maneuver phase: What type of indirect fires will the enemy conduct during each maneuver phase?
- Threat Air Defense Artillery Doctrine
  - Numbers and capabilities by echelon.
  - Disposition: Deployment on the battlefield.
  - Air phases of support.

### STEPS IN FA IPB PROCESS

#### DEFINE THE BATTLEFIELD ENVIRONMENT

4-84. The battlefield environment, to include the AO and area of interest (AOI), is normally provided to the FA battalion S2 by either the supported maneuver unit or the higher FA HQ. The S2, together with the commander and S3, reviews the identified AO and AOI to determine if changes should be

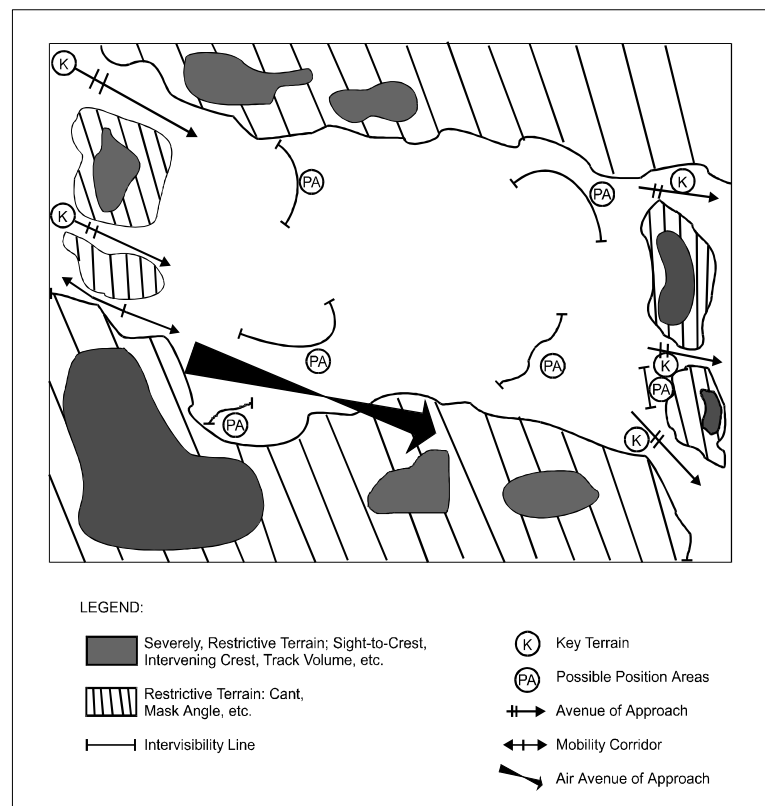
recommended based on the battalion's mission. As an example, if enemy FA can range the supported maneuver zone or the FA battalion from just beyond the maneuver/higher FA AOI, the FA battalion commander want to request an expansion of the AOI to include those enemy indirect fire assets that pose a significant threat. The AO and AOI, as defined by the commander, focus the S2's efforts, R&S, and RDO development.

## DESCRIBE THE BATTLEFIELD EFFECTS

4-85. This step includes weather analysis; MCOO; observation, cover, and concealment; AOAs, obstacles, and key terrain; and FA specific considerations. The supported unit or higher FA HQ normally provides the products that describe the battlefield effects. The FA battalion S2 must refine all products to accurately reflect the battalion's AO and AOI.

4-86. The defining product in this step is the MCOO (Figure 4-4). It is a graphic depiction of an in-depth study of the battlefield area incorporating terrain and weather. Refinement of the MCOO must:

- Analyze terrain from an FA perspective.
- Determine intervisibility lines.
- Identify avenues of approach and potential PAs.
- Identify key and decisive terrain.



**Figure 4-4. Modified Combined Obstacle Overlay**

## Analyze Terrain

4-87. Identify terrain that may cause firing problems. The FA definitions for different types of terrain are:

- **SEVERELY RESTRICTED** (green crosshatch marks) - causes extreme difficulty for weapon emplacement and firing.
- **RESTRICTED** (green single-hatch marks) - hinders emplacement and firing to a lesser degree and probably requires a detailed reconnaissance effort to locate suitable positions.
- **UNRESTRICTED** - is suitable for unit positioning.

4-88. To determine SEVERELY RESTRICTED, RESTRICTED and UNRESTRICTED areas, the FA battalion S2 analyzes:

- Elevation.
- Slope.
- Soil composition.
- Mobility problems.

## Determine Intervisibility Lines

4-89. The second step is to graphically depict the areas that deny intervisibility between opposing forces on the same overlay. Draw intervisibility lines where the terrain dictates. An intervisibility line is an area on the battlefield that opposing forces cannot observe beyond. Some examples include ridgelines, wadi systems, finger off a ridge, forested areas, etc. Intervisibility lines are particularly important when looking for PAs that are hidden from enemy AOAs. Following a map reconnaissance, the S2 can coordinate with the maneuver brigade or higher FA HQ for use of their stereoscope and satellite photography to further analyze the terrain. Most brigade level S2s are issued a computer assisted terrain analysis model called "Terra-Base," which is helpful in determining intervisibility lines.

## Identify Avenues of Approach

4-90. The third step is to identify and graphically depict air and ground AOAs on the MCOO overlay. Use the standard symbols in FM 34-130. Refine the higher or supported HQ IPB products that usually depict brigade and division-sized AOAs. Depict regiment and battalion sized AOAs that can affect the positioning plan.

4-91. Depict all enemy platoon and above size mobility corridors that can affect the battalion's AO. Focus this effort down to enemy platoon level because of the threat an enemy platoon poses to artillery units. An enemy tank platoon can easily destroy a firing unit. If the MCOO becomes too busy and unreadable with platoon-sized mobility corridors--only identify company-level mobility corridors. Finally, combine two or more mobility corridors into their appropriate battalion and regimental AOAs.

4-92. During this process the S2 must carry the higher-level unit's AOAs throughout the FA battalion's AO. The maneuver brigade usually stops its depiction of enemy AOAs at the brigade battle positions as they are not concerned about platoon- or company-sized units.

4-93. During the COA development process, the S3 should position units away from identified enemy mobility corridors and AOAs. If the situation dictates that units must be positioned on enemy air or ground AOAs, then the S2 should brief the affected commanders on the specific threat to his location. This provides the battery commander with critical information to consider during his own COA development.

#### **Identify Key and Decisive Terrain**

4-94. The fourth step is to identify and highlight key and decisive terrain using standard symbols. This information is graphically displayed on the MCOO overlay. During COA development, the S3 will avoid positioning batteries in these areas because they are where the close-in fight will likely take place.

#### **Identify Potential Position Areas**

4-95. This step is a key reason for performing the first four steps. The S2 evaluates the AO and templates all possible battery-sized PAs given the constraints of terrain identified in Steps 1-4. See the appropriate battery-level FM for friendly PA dimensions. Enemy PA dimensions will vary based on the type of weapon and tactics used. This templating of PAs is maintained for use during current and future operations. The S2 provides a product that assists the S3 in choosing appropriate battery PAs during COA development. This is most important during operations when the staff has limited planning time.

### **EVALUATE THE THREAT**

4-96. Analyze threat templates that accurately portray how enemy forces normally execute their operations and how they react to current conditions. Determine which enemy capabilities may significantly affect or be targeted against friendly FA operations.

4-97. Use doctrinal templates (which show how enemy doctrine dictates their tactical approach without terrain and weather constraints) to assist in providing answers to important FA questions: What are the HVTs for the enemy forces? What phases of FS will the enemy use based on friendly maneuver force actions? To which areas can the enemy FA and mortars range with conventional and rocket-assisted projectiles? Where will enemy FA, mortar units, electronic intelligence, and counterfire acquisition assets reposition? At what point will the enemy firing units need to resupply? How are they being resupplied? What is the enemy threat in friendly rear areas? (These questions are examples only.)

#### **EVALUATE THREAT COAs**

4-98. Concurrent with the development of friendly FA COAs by the battalion staff, the S2 analyzes the SITEMP (which is a doctrinal template adjusted for terrain and weather) and event template (which identifies and analyzes significant battlefield events and activities that provide indications of enemy COA). This is his next step in preparing for the COA analysis and comparison.

4-99. The S2 will usually receive the maneuver brigade or higher FA SITEMPs. Normally, the SITEMPs do not address all the concerns of the FA battalion. The S2 should refine them to focus on specific FA issues--including enemy indirect fire systems and units down to the battery level. As a minimum, the S2 must refine two SITEMPs: first is the most probable threat COA; second is the most dangerous threat COA.

### **Refinement of the SITEMP**

4-100. The refinement of the SITEMP involves the following steps.

- Analyze the enemy's mission (Usually provided by the supported maneuver unit or higher FA HQ).
- Locate enemy artillery and mortars (to battery/firing element level for FA and to tube level for FA and mortars in small scale contingencies).
- Analyze threat maneuver forces.
- Analyze threat AOAs and objectives.
- Analyze threat NBC strikes and capabilities.
- Analyze terrain for possible airborne and air assault insertion sites, terrorist or special forces type safe havens or assembly/staging areas, or small element indirect fire areas (use NAIs to focus R&S efforts).

### **Event Template**

4-101. The event template graphically depicts the events and timing of the upcoming battle. The template helps the S2 gauge the pace and tempo of the operation and identify potential targets by type, number, location, and time. The essential element in developing the event template is to have graphics that tie an enemy event to a location and that show trigger events to assist in synchronizing fires. At a minimum, the S2 should develop the event template for the enemy's most probable course of action and possibly most dangerous COA.

4-102. The brigade or higher FA HQ S2 will normally provide the FA battalion with the event template. This template focuses on the brigade/division/corps fight and the FA battalion S2 must refine it to focus on specific FS/FA issues. The primary problem the S2 faces is in the time increments used by the maneuver forces. The S2 may need to use smaller time increments (e.g., minutes vice hours) to facilitate FA planning. The steps in refining the event template for FA use are:

4-103. **Named Areas of Interest.** Copy all applicable NAIs onto the battalion event template. This includes any FA battalion specific NAIs necessary to prevent the battalion from being surprised by enemy actions such as a rear area airborne insertion, partisan activity, attack along an unexpected flank, etc. NAIs assist the FA battalion TOC in monitoring the progress of the battle, executing tasks, and anticipating battalion requirements. The S2 uses NAIs specific to the FA battalion in developing and executing the FA battalion's requirements for the R&S plan. Firing units, survey teams, ammunition convoys, and logistical elements may monitor some NAIs during the execution of their primary missions. External coverage must be coordinated if coverage of a battalion specific NAI is beyond the battalion's capabilities.

4-104. **Time Phase Lines.** The S2 develops TPLs that clearly depict the pace of the battle through all phases of the fight. The artillery's success or failure is determined in terms of minutes and seconds, so the S2 must focus TPLs in these terms. Increments of 5- to 15-minutes work best (e.g., 10, 20, 30).

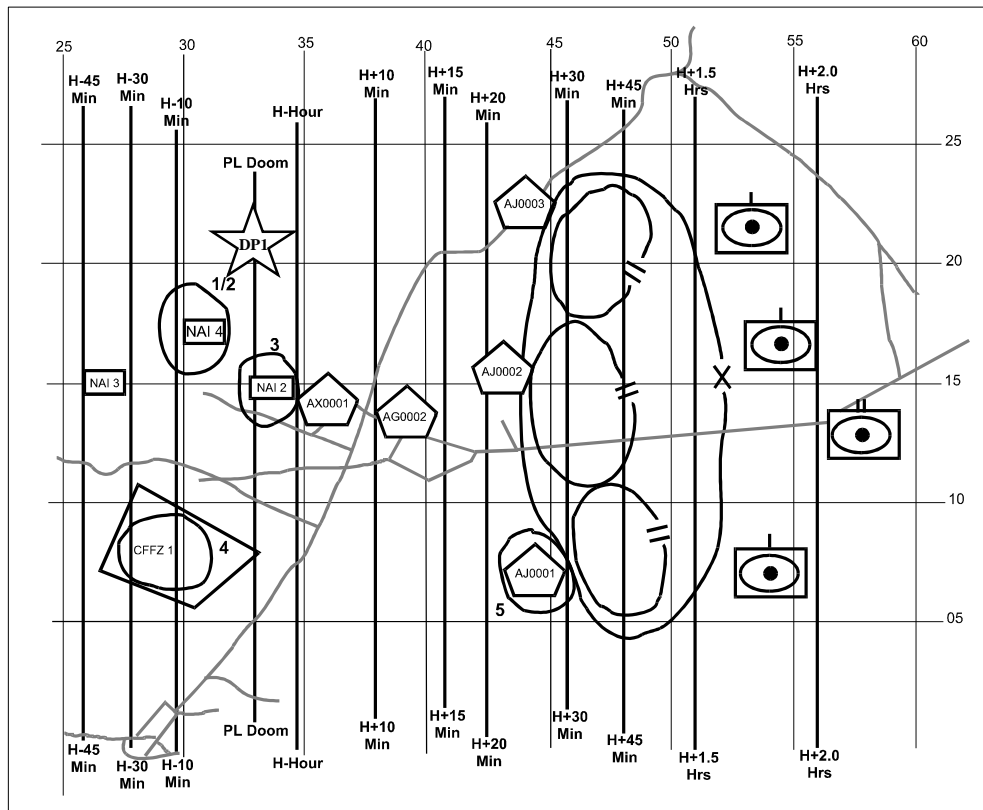
4-105. There are two types of TPLs: friendly offensive operations (blue lines) and threat offensive operations (red lines). Thus, if friendly units are conducting a defense, the S2 uses red TPLs to time the enemy offense. If friendly forces plan a counterattack, the S2 uses blue TPLs.

4-106. **Radar Zones.** The S2 incorporates proposed radar zones onto the event template. FSOs and the battalion staff will generate proposed operations and areas requiring coverage by radar zones. Based on the capability of the radar or the number of zones allocated by the force artillery HQ, the battalion staff finalizes the number, type, location, cueing assets, and/or time for all approved radar zones.

4-107. The TPLs on the event template assist the S2 in determining a proactive cueing schedule covering critical events such as friendly breaching operations or an enemy artillery fire plan by phase. TPLs also assist in determining triggers to implement or cancel preplanned radar zones. An example of an event template is at Figure 4-5.

#### **IPB Refinement**

4-108. The process doesn't end when the S2 has produced the IPB products. IPB refinement is an ongoing process. The FA battalion S2 uses his knowledge of the AO and AOI in conjunction with intelligence feeds from all sources to update the IPB products and advise the commander and S3 on changes to the threat COA and on impacts for the battalion.



N o	PIR/IR/ EFST/DP	Enemy Event	Target No NAI/TAI	Latest Time Information of Value	Friendly Decision Points	Actions/Reports Required
1	Fire SCATMINE @ Bde Obstacle	Enemy CRP at NAI 4, MRR 45 min from Bde obstacle	AG0002, NAI 3	H-5	DP1	Alert FSCOORD, S3, FDO, Bde FSO; send PERINTREP to battalion
2	Will enemy use chemical on BP?	Enemy Phase II/III fires on BP.	NAI 4	H		Alert FSCOORD, FSOs; check RDO; warn CHEMA and battalion
3	Mass the battalion on lead MIBN.	Lead MIBN @ PL Boom (10 min from target area)	AX0001, NAI 5	H-10		Alert FSCOORD, S3, FDO, Bde FSO; send out PERINTREP
4	Mass the battalion on the enemy's BRAG	Beginning of Phase II fires (CRPs within visual range of BP)	CRP @ NAI 4	H-15		CFFZ 1 in effect? Who is available to mass? Can DIVARTY help?
5	When will the firing batteries be in jeopardy from enemy direct fire?	1st echelon MIBN begin to breach the southern comp BP (45 min warn)	TF FPF, AJ0001	H+20		Alert the FSCOORD, S3, battery commanders; send out PERINTREP
<p>LEGEND:</p> <p>BP = Battle Position CFFZ = Call for Fire Zone CHEMO = Chemical Officer CRP = Combat Reconnaissance Patrol DP = Decision Point IR = Information Requirement</p> <p>MIBN = Motorized Infantry Battalion MIBR = Motorized Infantry Brigade NAI = Named Area of Interest PERINTREPS = Periodic Intelligence Reports PIR = Priority Intelligence Requirement</p> <p>PL = Phase Line BRAG = Brigade Artillery Group TAI = Targeted Area of Interest TF FPF = Task Force Final Protective Fires</p>						

Figure 4-5. Enemy Critical Events Matrix on the Event Template

## **SECTION III – FA BATTALION REHEARSALS**

### **REHEARSAL PRINCIPLES**

4-109. Rehearsals are an integral part of the planning process. An effective rehearsal both practices and tests the plan. FM 101-5 contains a detailed explanation of rehearsal types and techniques.

4-110. Time availability is the critical element in conducting rehearsals. WARNOs provide subordinates enough lead time and details to synchronize their rehearsal schedules with battalion and higher rehearsals. A DS FA battalion integrates its rehearsals into the maneuver force's rehearsal plan. A FA battalion with a R mission must coordinate rehearsals with the reinforced unit, while a GS battalion coordinates with its higher FA HQ. All rehearsals should complement higher rehearsal plans. The principles for an effective rehearsal program include:

- Clearly identify rehearsal objectives (review commander guidance on type, scope, focus, and commander's intent for the rehearsal).
- Prioritize tasks and events (focus on EFSTs, EFATs).
- Establish high standards (What constitutes successful completion of a rehearsal event? Will the unit limit repetitions to retraining to correct substandard tasks or to also reinforce successful training?).
- Conduct multi-echelon, synchronized rehearsals.
- Determine all rehearsal participants.

### **REHEARSAL TYPES**

4-111. Each of the five types of rehearsals described in FM 101-5 achieves a specific result and has a specific place in the MDMP time line.

- Confirmation brief.
- Backbrief.
- Combined arms rehearsal (CAR).
- Support Rehearsals.
- Battle drill or SOP rehearsal.

### **REHEARSAL TECHNIQUES**

4-112. FM 101-5 identifies six primary rehearsal techniques that differ in the level of detail, time, resourcing, and operational security.

- Full dress.
- Reduced force.
- Terrain model.
- Map.
- Sketch map.
- Radio.



## SCRIPTING THE REHEARSAL

4-113. Use of a script keeps the rehearsal on track and serves as the checklist to ensure the rehearsal addresses all battlefield functions and all critical issues. A script has four parts:

- **Agenda** – Use the FSEM, FASM, FASP, RDO, and other tools as appropriate to drive the rehearsal and to keep it focused.
- **Response Sequence** – Establish a logical sequence for player response to rehearsal events (e.g., by BOS, front-to rear, left-to-right). Disseminate the sequence prior to the rehearsal to all participants.
- **Unit Actions Checklist** – Describe friendly and enemy actions succinctly yet in enough detail that critical items aren't forgotten or assumed. Use established formats or checklists.
- **Sequence Of Events** – Provide advance notice of the rehearsal format.

## CONDUCTING A REHEARSAL

### BEFORE THE REHEARSAL

4-114. The unit should accomplish the following prior to the rehearsal:

- Determine objectives, standards, and scope of the rehearsal; the rehearsal type and technique; the participants; and the date, time, and place for the rehearsal. Coordinate rehearsal schedules.
- Disseminate rehearsal information. Include a list of personnel, equipment, information, and/or materials they need to bring.
- Prepare rehearsal support items: models, maps, sketches, overlays, and copies of key documents (e.g., OPORDs, matrices, or handouts).
- Review the agenda, identify decision points, branches, and repetition requirements.
- Validate time required with time available and modify as necessary.
- Coordinate adequate representation of elements that cannot attend.
- View and prepare the rehearsal site as appropriate.

### DURING THE REHEARSAL

4-115. The following paragraphs provide a generic sequence of events.

- Step 1. **Review Ground Rules.** Participants, sequences, times.
- Step 2. **Deploy Enemy Elements.** Briefly describe key factors.
- Step 3. **Deploy Friendly Elements.** Briefly describe key factors.
- Step 4. **Initiate Action Sequence.** Enact friendly and enemy events.
- Step 5. **Identify Decision Points.** Both friendly and enemy.
- Step 6. **Identify End State.** For the COA or branch.
- Step 7. **Recock.** Repeat for all decision points, branches, COAs.
- Step 8. **Rehearsal Review** – Identify and resolve outstanding issues.

4-116. The staff ensures all changes, coordination, and new requirements resulting from the rehearsal are clearly understood by all participants and documented by the recorder. All changes are considered verbal FRAGOs until the staff publishes the written changes.

## **AFTER THE REHEARSAL**

4-117. The staff must translate modifications identified during rehearsals into verbal and/or written changes to previously published plans, orders, and even SOPs. Post rehearsal actions may include the following:

- Revise the FSP, FASP, schedules of fires, pre-planned and on-call target lists, RDO, EFSTs, and EFATs.
- Notify key personnel not in attendance of the results of the rehearsal and all changes or issues.
- Disseminate a verbal or written FRAGO and supporting documents as necessary to document and disseminate the changes.
- Coordinate changes with supporting/supported elements.
- If time is too short to properly incorporate all target changes, designate new targets as on-call targets.
- When time becomes available, conduct an internal/staff AAR to identify changes necessary to the rehearsal process and SOP.

## **SCHEDULING REHEARSALS**

4-118. The FA battalion must coordinate and synchronize its rehearsal schedule with higher FA HQ and maneuver force rehearsals. Units can conduct rehearsals in a top-down or bottom-up approach. The latter method better prepares subordinates for the higher HQ' rehearsals. The nested rehearsal technique facilitates rehearsal planning and conduct of rehearsals.

## **THE NESTED REHEARSAL**

4-119. The nested rehearsal technique integrates mission or task specific rehearsals and makes maximum effective use of time by initiating the preparation/rehearsal process immediately upon receipt of the first WARNO. The goals of the nested rehearsal are to:

- Ensure all types and echelons of rehearsals are prioritized.
- Ensure all rehearsals are fully time-resourced.
- Ensure leader involvement in subordinate rehearsal processes.
- Provide command-driven, bottom-up refinement of all plans.
- Prevent procrastination of rehearsal processes.

4-120. Before implementing the nested rehearsal concept:

- Identify mission/task specific PCCs and PCIs.
- Revise the battalion battle book to include detailed battery through section level rehearsals and drills.

4-121. Standardization of battle drills ensures all leaders will understand what type of rehearsals and standards are expected at critical phases of the planning process. Several key principals guide the nested concept:

- Higher rehearsals occur last in the timeline.
- Lowest level drills occur first and as soon as possible.
- All orders and rehearsal DTGs are directed by the higher HQ.
- Stagger same-echelon rehearsals to facilitate leader supervision.
- Leaders and key personnel attend all subordinate echelon CARs.

## EXAMPLE NESTED REHEARSAL

4-122. This section uses the maneuver brigade and DS FA battalion as an example in describing the nested rehearsal process.

### Phase One - WARNOs

4-123. Initial WARNOs go out giving all units broad mission/task guidance and tentative OPORD and rehearsal timelines. The FA battalion receives the brigade WARNO and issues its WARNO which provides:

- The nature of the mission.
- Approximate DTG of the brigade OPORD and the battalion FASP.
- The tentative DTGs of the brigade FS & combined arms rehearsals, FA battalion support rehearsals, and battery rehearsals.

4-124. Battery commanders review the battalion WARNO and issue guidance concerning battery, platoon, and section rehearsals and anticipated EFATs. Platoon and section leaders review the commander's guidance and begin developing their rehearsal plans.

### Phase Two – Planning/Preparation

4-125. The brigade and battalion develop and wargame their plans, and assemble the detailed information for OPORDs, FSPs, and the FASP. As the MDMP progresses, subsequent WARNOs provide more detailed information on missions, tasks, EFSTs, and EFATs. Rehearsal times may also change, which can cause a ripple effect in all rehearsal time lines. Synchronization of all higher, parallel and subordinate rehearsal schedules is a major task for leaders at all levels.

4-126. Units should issue as much detailed information as possible before section and platoon rehearsals begin. The most critical information includes the type of tasks, the conditions under which they must be performed (e.g., night, MOPP4, digital versus voice, AFATDS/IFSAS/FDS interface), and any changes from SOP.

### Phase Three - Rehearsals

4-127. The rehearsal process begins with section and platoon PCCs, drills, and rehearsals. Battery leadership should attend these when possible. These lower level rehearsals may begin even before the FASP is published.

4-128. Lower rehearsals complement and build toward higher rehearsals. Units may modify plans based on feedback from lower level rehearsals. Staggering battery rehearsals can facilitate battalion observation. Additional section through battery level rehearsals can occur when the battery is not conducting its formal rehearsal. However, units must balance rehearsal time with planning and preparation time.

4-129. An example battalion rehearsal timeline is shown in Table 4-3. Actual times and sequences will vary based on the situation.

**Table 4-3. Example Rehearsal Schedule**

<b>FA BATTALION TIMELINE</b>	<b>REHEARSAL ACTIONS</b>
1900	Bde issues WARNO with rehearsal guidance/schedules. FA Bn initiates staff estimates.
2000	FA Bn issues WARNO with Bn rehearsal guidance/schedules.
2030	Battery commanders receive WARNO and issue alerts and rehearsal guidance.
2100	FA Bn staff finalizes mission analysis and prepares briefing.
0000	FA Bn staff briefs mission analysis and continues COA development.
0300	COA development brief.
0500	FA Bn issues second WARNO with FASP time. FA Bn begins wargaming.
0600	Platoons and sections begin drills. Times established by battery commanders.
0800	FA Bn begins production of FASP (including rehearsal plan). FA Bn issues third WARNO with mission-specific rehearsal information.
0900	FA Bn issues/briefs FASP. FA Bn disseminates final EFATs, movement, targeting, and fire control information.
0930	FA Bn Cdr receives confirmation briefs from battery commanders & staff.
1100	Bde, Bn FSEs, FISTS, & COLTs/Strikers begin drills.
1100	C Btry rehearsal begins - EFAT 1 & 4. - Bn Cdr attends, receives backbrief.
1100	ALOC – CSS support map rehearsal begins. - Bn XO attends.
1200	B Btry rehearsal begins - EFAT 2 & 4. - Bn CSM Bn S3 attends.
1200	CP/TOC – Drill/SOP rehearsal as necessary. - Bn Cdr, XO, or S3 attends.
1300	A Btry rehearsal begins - EFAT 3. - Bn Cdr, XO, or CSM attends.
1330	Remaining battery commander & staff backbriefs to FA Bn Cdr begin.
1500	FA Bn integrated FS/tactical/technical support rehearsal begins.
1700	Mvr Bde FS rehearsal begins. - FA Bn Cdr participates at FA Bn TOC or Bde FSE.
1900	Mvr Bde combined arms rehearsal begins. FA Bn Cdr participates at FA Bn TOC or Bde FSE.
2100	Additional FS/FA rehearsal(s) as needed. Goal = Improve/reinforce rehearsed tasks and/or rehearse new tasks identified during previous rehearsals.

## FA BATTALION REHEARSALS

4-130. The following information provides broad guidance and possible techniques. Timeframes mentioned are rough estimates based on lessons learned feedback from units, publications, and other published documents. Actual rehearsal techniques, schedules, and time frames will vary depending on the situation and unit SOPs.

## CONFIRMATION BRIEFS AND BACKBRIEFS

4-131. FA commanders and staff leaders give and receive confirmation briefs and backbriefs. Since confirmation briefs often occur immediately after the briefing or issuing of the OPORD, commanders and staff should prepare in advance. If time is limited, the FA battalion commander may have the XO and S3 take some of the briefings from subordinate leaders. A supported maneuver force may also use this disseminated briefing technique, however the DS commander should try to give his briefing to the maneuver commander whenever possible.

## COMBINED ARMS REHEARSALS

4-132. FA battalion participation in CARs will occur more frequently, and will be more extensive for FA battalions with a DS or R mission. Divisional GSR or GS FA battalions may participate, to a lesser extent, in division CARs. FA battalions at corps level may have little involvement in corps CARs, but may participate extensively in corps artillery or FA brigade rehearsals. (Note: The following discussions are oriented toward DS/R battalions and the CAR process. In most cases, use of "CAR" can be replaced with "higher FA HQ rehearsal" and the information will be just as applicable for GS/GSR units.)

4-133. The maneuver or higher FA HQ commander, the type of rehearsal, and the technique will determine the extent of the FA battalion's involvement in a CAR. As a minimum, a FA battalion's FS personnel and the FA battalion TOC will participate in CARs.

4-134. When time is limited, the FA battalion may integrate some of its support rehearsals into the CAR. However, this should not interfere with the CAR. The battalion should rehearse critical tasks prior to the CAR.

## SUPPORT REHEARSALS

### Fire Support Rehearsals

4-135. **Purpose.** FS rehearsals verify synchronization of the FSP with the scheme of maneuver. They focus on the execution of EFSTs and the FSEM, the effectiveness of FSCMs, and the timing and synchronization of all FS efforts. FS rehearsals are most applicable to DS FA battalions.

4-136. **Types.** Two possible types of FS rehearsals are:

- A maneuver brigade FS rehearsal involves the brigade staff and all other elements involved in the FS process. It rehearses all EFSTs, or when time is limited, the ones designated by the maneuver commander. This rehearsal can be used prior to the CAR, as a preparation tool, or after the CAR, to reinforce previous rehearsals, or to address weaknesses or changes identified during the CAR.
- A small-scale rehearsal involving only the FA FS personnel in FSEs, FISTs, COLTs/Strikers and possibly the FA battalion TOC. It focuses on the functioning of the FS chain. Units use these rehearsals to prepare for other rehearsals, to reinforce training, or when limited time is available.

4-137. **Agenda.** Use the FSEM and DST, focusing on critical EFSTs. Normally prior to rehearsal, the DS battalion FDO, or force FA HQ, will announce a consolidated target list. For each target or EFST in the FSEM, address location, trigger point, engagement criteria, primary/backup observer and communications methods, clearance of fires, method of engagement, and attack guidance. CARs are excellent opportunities to identify terrain and route management issues. Ensure the DS battalion S3 presents FA movement plans and out-of-action cycles for DS and R units as appropriate. Rehearse radar target handoff and counterfire, having the radar section leader insert one or two acquisitions per phase of the rehearsal. Inserting unplanned counterfire requirements and close support requests into the

rehearsal at key points in the FSEM is necessary to evaluate priorities of fire and possible FS related decision points.

4-138. The sequence should usually mirror that of the CAR, following all necessary branches and decision points. However, the FSCoord or BDE FSO may determine the specific sequence.

#### FA Tactical Rehearsals

4-139. **Purpose.** Tactical rehearsals ensure the FASP properly plans and synchronizes FA tactical fire control, movement, and key CSS operations.

4-140. FA tactical rehearsals focus on:

- The tactical execution of EFATs, the FASM, and schedules of fires – primary and backup methods (shooter focus).
- Tactical fire control and mission routing procedures.
- Clearance of fires requirements and procedures.
- Commander's attack criteria and priority of fires considerations.
- The effectiveness of FA movement and positioning plans, primary and alternate, for firing, C2, and CSS elements.
- Targeting, counterfire, and SEAD operations.
- Mutual support/continuity operations.
- Communications requirements – use and positioning of retrans equipment, use of voice versus digital.
- Survey requirements.
- The timing and synchronization of all FA efforts with each other and with the maneuver operations.

4-141. **Types.** Methods for conducting FA tactical rehearsals include:

- A robust, detailed rehearsal involving all elements involved in the tactical fire control process – FA battalion TOC, firing batteries, brigade/battalion FSEs, radars, key CSS personnel, and reinforcing units. It would address the full range of tactical issues and extend down to platoon and possibly section level.
- A leader-focused rehearsal may involve only the FA TOC, the brigade FSE, firing battery C2, and radar. The rehearsal may focus on the highest priority EFATs or FASM events or on particular aspects of tactical operations, such as fire missions and movement.

4-142. **Agenda.** Use the FASM, focusing on critical EFATs. The S3 should also review the maneuver DST, the FSEM, EFSTs, and consolidated target list for any critical events with FA applicability that may not be reflected on the FASM. For each target or EFAT in the FASM, address location, trigger point, engagement criteria, primary/backup observer and communications methods, clearance of fires, method of engagement, and attack guidance. The battalion S3 should present FA movement plans and out-of-action cycles for all FA units as appropriate. If time permits, rehearse radar, survey, and counterfire contingencies that require evaluation of alternate plans or methods.

4-143. The sequence may mirror the CAR, or higher FA HQ rehearsal, or the battalion commander or S3 may determine the sequence.

## FA Technical Rehearsals

4-144. **Purpose.** FA technical rehearsals are used to ensure that the FASP properly addresses FA technical FD and to exercise the technical FD process. FA technical rehearsals focus on:

- The technical execution of EFATs and the FASM – sensor-to-shooter links and primary and backup methods (FDC focus). Rehearsal of backups includes evaluation of reactions to catastrophic loss of an FDC (battalion or battery) and loss of digital or voice capability.
- Integration of tactical and technical fire control processes and computation of firing solutions, to include the communication and interaction between FS, FD and firing elements.
- Identification of technical FD issues – high angle fire, MSD, target/munition/range/FSCM conflicts.
- Digital database verification – Setup, communications, positions, FSCMs, target and attack guidances, mission routing and intervention points, target list, and scheduling data.
- Digital CONOPS – minor and catastrophic.
- Digital interface requirements – AFATDS-IFSAS/FDS, AFATDS version differences, and any other digital systems.
- Integration of voice and digital operations, to include backup plans.

4-145. **Types.** FA technical rehearsals can include the following:

- A robust, detailed digital rehearsal designed to exercise the entire FA digital communications system, verify databases, and ensure interoperability of different digital systems. This rehearsal verifies that all nodes can effectively communicate, all message formats can be passed, and fire mission routing will execute as required.
- (AFATDS NOTE: In AFATDS, a unit cannot rehearse a plan digitally until it is implemented into the Current Situation. Before each phase can be rehearsed, it must be implemented by all AFATDS OPFACs involved in the rehearsal.)
- A rehearsal focused on technical FD, to include the FS/Ops/FDC mission routing/handoff process. While FS personnel may be involved, the focus is on the exchange of fire mission data and timing issues rather than the tactical decision-making process.
- A FDC rehearsal from the battalion FDC down to firing sections.

4-146. **Agenda.** The agenda and sequence will vary dependent on the focus. In a technical rehearsal with a FD focus, the FASM and EFATs may be the key reference. For rehearsals focused on digital operations, the unit may use a combination of the FASM and a digital rehearsal SOP. The latter would identify the major digital communications events to be rehearsed and the database elements to be verified.

4-147. **Digital considerations.** Units must consider the potential dangers inherent in automatic data distribution during digital rehearsals, and take safeguards to separate the rehearsal and "real world" events. As an example, digital missions initiated during a rehearsal may automatically generate artillery target intelligence (ATI) messages or mission fired reports (MFR) messages to external OPFACs that are not participating in the rehearsal.

Also, movement of unit icons in AFATDS during the rehearsal may generate unit updates to external OPFACs. (In order to process rehearsal targets in AFATDS, firing units must be able to range their respective targets).

4-148. These external OPFACs will be unable to differentiate between “real” and “rehearsal” information, unless they have been notified of the rehearsals and have been clearly briefed on how to identify rehearsal traffic from real data. Because of this, units should consider modifying their digital communications settings to prevent external dissemination of rehearsal data. Units must ensure that all elements reset required settings after the rehearsal is over.

4-149. At the same time, units must be prepared to quickly restore “real world” settings and databases and return to the current battle. Units must keep rehearsal fire missions distinctly separate from live missions. The S3 should postpone rehearsals when a “real world” fire mission needs to be processed. The commander may need to terminate the rehearsal to prevent database corruption and confusion.

#### FA CSS Rehearsals

4-150. **Purpose.** CSS rehearsals verify and reinforce FA CSS planning and synchronization, and ensure that the FASP and FASM address essential CSS tasks. FA CSS rehearsals address:

- The CSS required to support execution of EFATs and the FASM – primary and backup methods.
- Positioning and movement of the battalion trains – Synchronization with FASM and higher/subordinate CSS locations and operations.
- Ammunition distribution, positioning, expenditure, and resupply.
- Maintenance and recovery operations – when, where, how.
- Refueling and resupply requirements – when, where, how.
- Medical treatment and evacuation procedures.
- EPW procedures.

4-151. **Types.** FA battalion CSS rehearsals may include:

- A robust rehearsal involving the TOC, ALOC, BSOC, CSS leaders, firing batteries, reinforcing units, and possibly the brigade FSE.
- A limited rehearsal conducted in the ALOC, by the XO, and involving primarily leaders from the CSS sections.

4-152. **Agenda.** Useful guides include a CSS rehearsal checklist and the FASM; however, the agenda may vary dependent on the rehearsal’s focus.

#### Integrated Rehearsals

4-153. Units may integrate FS and FA tactical, technical, and CSS rehearsals to maximize use of limited time. The commander will determine the amount of focus placed on each major area. As a minimum, integrated rehearsals usually:

- Verify EFSTs/EFATs planning, to include:
  - Each HPT, its number, location, purpose, and priority.
  - Primary and alternate triggers, observers, and sensors.



- The unit that will deliver fires.
- Attack guidance – shell-fuze combination, number of volleys, and units to fire.
- Method of engagement is specified – time on target (TOT), at my command (AMC), when ready.
- Time-space relationship between unit response time, duration of fires, and scheme of maneuver.
- Rehearse the mission thread from the observer/sensor to the firing unit for each EFST/EFAT. Validate the following:
  - Primary and backup sensor-to-shooter communication links are coordinated - supported unit, observers (ground/air), FSEs, FDCs, firing sections, radars, intelligence assets.
  - Correct solution of the FS system.
  - Attack methods (shell, fuze, unit).
  - The use of intervention points in automated FS systems.
  - Correct function of mission routing information.
  - Coordination and deconfliction of targets, if required.
- Identify key FA actions that support each phase, to include:
  - Movement requirements, especially the trigger events that initiate moves and their relationship with the EFSTs and EFATs. Discuss survivability move criteria.
  - Verification of time-space relationships between EFATs and FA movements to ensure units are in position to mass during critical periods and verifies the terrain management plan.
  - Logistic requirements, especially critical CSS tasks.
- Verify FSCMs and coordination requirements for critical targets.
- Review who has priority of fires during each phase.
- Verify the digital database.